

RSSG Newsletter

Association of American Geographers
Remote Sensing Specialty Group

June 1992



RSSG PLANNING FOR AAG - ATLANTA

Call for Papers and Session Organizers

Although it is only July, the September deadline for planning RSSG sessions for the 1993 Atlanta AAG meetings will be upon us shortly. Dr. C.P. Lo (University of Georgia) has volunteered to serve as RSSG Program Chair. The meetings will be held April 6-11, 1993. RSSG members interested in organizing paper sessions, workshops, field trips or other activities are urged to contact Dr. Lo as soon as possible. All session organizers and presenters of papers should send abstracts, registration forms and fees in one complete package to Dr. Lo on or before September 7, 1992 so that the package can reach the AAG office by the September 21, 1992 deadline. Details on formats for

Continued on page 2 ... Atlanta

THANKS ARE EXTENDED

To Duane Nellis (Kansas State University) for two years of exceptional RSSG leadership;



To Greg Plumb (University of Oklahoma) for diligent service as RSSG Secretary-Treasurer during the past two years; and,

To Doug Stow (San Diego State University) for coordinating RSSG sessions during the 1992 AAG-San Diego meetings, and for arranging for RSSG workshops to use the impressive San Diego State University remote sensing laboratory facilities.

OUTSTANDING CONTRIBUTIONS AWARD HONORS DAVID SIMONETT

The late Dr. David S. Simonett has been honored as the first recipient of RSSG's Award for Outstanding Contributions in Remote Sensing. Dr. Simonett was an internationally-known scholar and educator, Chair of the Department of Geography at

Continued on page 9 ... Award

LANDSAT LEGISLATION PROGRESSES

During the last year there has been a growing effort in Congress and the Administration to change the Landsat Commercialization Act of 1984. Two bills potentially impacting the operation of Landsat and Landsat data policies have been introduced. Representative George Brown (D-CA) has authored the "National

Continued on page 2 ... Landsat

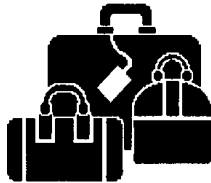
Atlanta ... Continued from page 1.

submitting papers, organizing sessions and workshops, and other information on the meetings was contained in the AAG Newsletter, May 1992 issue. Those who do not have the newsletter can obtain copies from AAG Headquarters.

For additional information contact:

Dr. C.P. Lo
Department of Geography
Room 204, GGS Building
University of Georgia
Athens, GA 30602-2502

Telephone: 706-542-2330
FAX: 706-542-2388
EMAIL: chpanglo@uga.bitnet



Landsat ... Continued from page 1.

Landsat Policy Act" (H.R. 3614) and Senator Larry Pressler (R-SD) has sponsored the "Landsat Remote Sensing Policy Act of 1992" (S. 2297).

Brown's bill originally called for a two-tiered pricing structure with "marginal" prices for government and global-change researchers, and commercial prices for other buyers. The Pressler bill mandates a single "marginal" price to all users, and does away with the commercialization sections of the 1984 Landsat Act. Both the Brown and Pressler bills would place the Landsat program under joint DOD/NASA management. NASA would be responsible for interfacing with civilian users. The Brown bill was adopted by the House of Representatives on June 9, 1992. Both bills are now being considered by the Senate.

In a letter to Murray Felsher, publisher of the Washington Remote Sensing Letter, excerpts of which are reprinted here with permission, Rep. Brown notes:

Although there is consensus that the existing commercialization scheme has faltered, there is no consensus about what to replace it with... Contrary to some misconceptions, H.R. 3614 does not require a two-tier data pricing policy. Nor would it preclude a single-tier data policy. Rather it leaves to negotiations the issue of what changes should be made in data policy for Landsat 1 through 6. As for Landsat 7, H.R. 3614 gives the Administration broad latitude to define a data policy. It seems clear, however that the Administration intends to distribute Landsat 7 data to all users at a cost geared to the expense of reproduction and transmission. Over the next two months, we will be working with the Senate to reach a final bill. We will also be working with the appropriate Committees to secure funding for the Administration's FY 1993 Landsat request (\$80 million for the Department of Defense and \$25 million for NASA).

Reproduced with permission from the Washington Remote Sensing Letter, Vol. 11, No. 22

Congratulations!

John R. Jensen (University of South Carolina) testified on proposed Landsat legislation before the Senate Committee on Commerce, Space and Transportation held May 6, 1992 in Washington, D.C. (cited in Aviation Week and Space Technology magazine, May 11, 1992).

Stanley A. Morain (University of New Mexico) assumed the presidency of the American Society for Photogrammetry and Remote Sensing (ASPRS).

Tina K. Cary (EOSAT) became Chair of the ASPRS Remote Sensing Applications Division, taking over from T.H. Lee Williams (University of Oklahoma).

James W. Merchant (University of Nebraska-Lincoln) was named the American Society for Photogrammetry and Remote Sensing liaison to the AAG.



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MINUTES

AAG Remote Sensing Specialty Group Business Meeting

Place: Leucadia Room, Marriott Hotel, San Diego,
California

Time: Tuesday, April 21, 1992, 8:00 a.m.

Attendance: 30 members

1. Opening Statement

Duane Nellis expressed thanks to Doug Stow and everyone else who aided in the planning of this year's RSSG sessions and workshops.



2. Secretary/Treasurer's Report

Greg Plumb distributed copies of the minutes from the 1991 business meeting. A motion was made to accept these minutes. The motion was seconded and approved.

Plumb reported on the financial standing of the RSSG. Including outstanding bills, we have a current balance of \$255.62 as compared with a balance of \$855.08 for the previous year. Expenditures totalled \$2078.48, comprising newsletter expenses (\$608) and a "one-time" purchase of medallions for the new Outstanding Contributions Award (\$740). The RSSG dues rebate from the AAG and interest income generated \$1479.10 in revenue. A motion was made to accept the financial statement, was seconded and approved.

As of January 6, 1992, there were 308 RSSG members consisting of 198 non-students and 110 students. This is significantly lower than last year's membership. RSSG dues are currently \$5 per year for faculty and other non-student professionals, and \$1 per year for students. The incoming RSSG officers will need to check with the AAG National Office about receiving dues of late-renewing members. The dues structure was discussed during the meeting. It will remain the same for next year.

3. RSSG Newsletter Editor's Report

Jim Merchant reported that 575 people are currently on the mailing list for the RSSG newsletter. In addition to current members this list includes former members, late-renewing members, and AAG officers and Annals and PG staff. The newsletter is mailed to former members in the hope that they will rejoin the specialty group. The mailing list is, however, being revised to reflect the drop in RSSG membership. There will be at least three RSSG newsletters this year.

Suggestions were made to offer the newsletter on electronic mail and to solicit paid advertising in the newsletter. These possibilities will be examined. Volunteers to help on either suggestion are sought.

Duane Nellis noted that the AAG is considering expanding its newsletter to include space for specialty group use. If implemented, such a change could allow the RSSG to reduce the number of newsletter issues. The sentiment of those RSSG members attending the business meeting was that RSSG should maintain its own newsletter and utilize space in the national newsletter for items such as announcements.

4. Committee Reports

The nominating committee for the RSSG Outstanding Contributions Award, consisting of Kamlesh Lulla, John Jensen, Tony Lewis, Don Rundquist, and Sally Gros, reported that the late David Simonett will be the recipient of the first RSSG Outstanding Contributions Award.

The student awards committee consisting of Ted Alsop, John Harrington, and Scott Samson reported poor response to this year's AAG student paper competition. Faculty members are encouraged to urge their students to become involved in next year's competition in Atlanta. Two vendors are interested in donating books as

Continued on page 4 ... Minutes

RSSG OFFICERS 1992-1993

Chair

Tina K. Cary
Earth Observation Satellite Company
4300 Forbes Boulevard
Lanham, MD 20706
Telephone: 301-552-0542
FAX: 301-552-5476

Vice Chair

Stephen J. Walsh
Department of Geography
University of North Carolina
Chapel Hill, NC 27599-3220
Telephone: 919-962-8901
FAX: 919-962-5604

Secretary-Treasurer

R. Douglas Ramsey
Department of Geography
Utah State University
Logan, UT 84322-5240
Telephone: 801-750-1790
FAX: 801-750-3798

Director

Anthony J. Lewis
Department of Geography and Anthropology
Louisiana State University
Baton Rouge, LA 70803
Telephone: 504-388-5942
FAX: 504-388-6400 (Geography)

Student Director

Richard Lissitschenko
Department of Geography
Kansas State University
Dickens Hall
Manhattan, KS 66506
Telephone: 913-532-6727
FAX: 913-532-7736

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additional awards. It was suggested that only the presentations be judged, with no requirement of a written paper submission. The award winner should also be announced during the AAG Awards Luncheon, although this would require the participants to present their papers preceding the luncheon. It was also suggested that student competition papers be allowed during regular paper sessions rather than only in a separate student paper session, but this would require additional planning for judging the papers. Travel awards were also suggested as a possibility to increase participation.

Duane Nellis announced new committee appointments. The fund raising committee consists of Bob Holz, Percy Dougherty, and Vince Ambrosia. The membership committee includes Dave Lusch, Kevin Price, and Jeff Cameron. The ASPRS Liaison committee is comprised of Sam Goward, Mary Dillworth, and Barry Haack. Jim Merchant has been appointed by ASPRS to be their liaison to AAG and RSSG.

5. RSSG Outstanding Contributions Award

David Simonett was named recipient of the first RSSG Outstanding Contributions Award. David's son will accept the award and medallion during the AAG Awards Luncheon. Kam Lulla requests nominations for future awards.

6. Regional Councilors for the RSSG

The Regional RSSG Councilors are: Ray Lougeay, Middle States; Bill Hamilton, New England; Kam Lulla, Southwest; Doug Stow, Pacific Coast; Shamim Naim, West Lakes; Dave Lusch, East Lakes; Mike Hodgson, Great Plains-Rocky Mountains; Sam Goward, Mid-Atlantic.

7. RSSG Activities for the International Geographical Congress (IGC)

Steve Walsh is organizing remote sensing sessions for the IGC meetings in Washington, D.C. ISPRS

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Minutes ... Continued from page 4.

will be occurring concurrently with the IGC. It was announced that student volunteers are being sought for the IGC meetings, with free registration and reduced room rates.

8. Sessions for the 1993 Atlanta AAG meetings

All members were urged to consider paper presentations, organizing sessions and workshops, and other activities.

9. Other Business

Legislation on the future of Landsat is pending in the U.S. Congress. Fees charged for Landsat data may be affected. RSSG members were urged to obtain copies of legislation from their congressional delegations and to express their views to their representatives.

Duane Nellis noted that AAG is going back to 20 minute paper sessions at the Atlanta meetings. The next two AAG meetings will also occur over the Easter holiday, to the displeasure of many members. AAG Executive Director Ron Abler stated that beginning in 1995 the annual meetings will not occur over Easter.

Dale Johnson of Positive Systems, Kalispell, Montana made a presentation about its Education package (outlined in the March 1992 RSSG Newsletter).

About 60 RSSG members sent in ballots to elect RSSG's new vice-chair, secretary-treasurer, and student representative. Tina Cary (EOSAT), current vice-chair, will assume the role of chair.

The new officers of RSSG are:

Tina Cary, Chair

Steve Walsh, Vice-Chair

Doug Ramsey, Secretary-Treasurer

Richard Lissitschenko, Student

Representative

10. Meeting Adjourned, 9:30 a.m.

Gregory A. Plumb
Secretary/Treasurer

Landsat ... Continued from page 2.

Dr. John R. Jensen (University of South Carolina) was one of those offering testimony at hearings on the Pressler bill held before the Senate Committee on Commerce, Space and Transportation on May 6, 1992. Dr. Jensen is cited in an excellent summary of the status of the legislative proceedings as of early May contained in Aviation Week and Space Technology magazine (May 11, 1992). Another good review of the legislative proceedings is included in the Geosat Committee President's Report (June 30, 1992). The latter report can be requested from The Geosat Committee, Inc., P.O. Box 1762, Norman, OK 73070-1762; Telephone: 405-799-1515; FAX: 405-799-1565. The Washington Remote Sensing Letter also provides up-to-date synopses of legislative proceedings. For subscription information write WRSL, P.O. Box 2075, Washington, D.C. 20013.

RSSG members should be aware that provisions of both bills are in constant flux. All members are urged to contact their respective congressional delegations for details on the current provisions of the Brown and Pressler bills, and to express their opinions on this important legislation. Copies of correspondence should be mailed to Representative Brown, Senator Pressler and Senator Albert Gore as the bills are now before Senator Gore's subcommittee.

CONTRIBUTORS



Contributors to this issue of the RSSG Newsletter include:

Daniel Brown (Michigan State University)

Tina K. Cary (EOSAT)

C.P. Lo (University of Georgia)

M. Duane Nellis (Kansas State University)

Gregory A. Plumb (University of Oklahoma)

William A. Tyler (Environmental Research
Institute of Michigan)

Stephen J. Walsh (University of North Carolina)

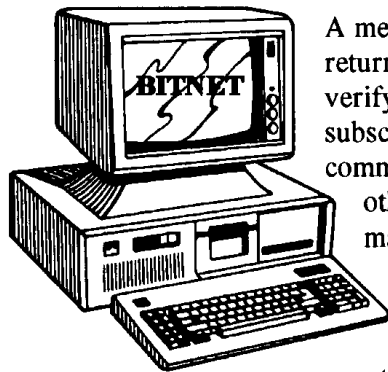
REMOTE SENSING E-MAIL LIST

Last year an electronic mailing (E-MAIL) list was established to facilitate the exchange of information among professionals engaged in developing and using technology related to digital image processing and remote sensing. The list is simple to use and comes right to your electronic mailbox via BITNET. To subscribe to the list and to receive all "postings," send a mail message to:

LISTSERV@CSEARN.BITNET

The message should contain only the following line:

SUB IMAGRS-L "your real name"



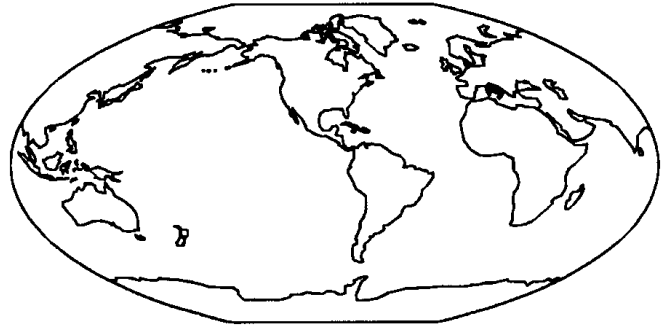
A message will be returned to you verifying your subscription. You can communicate with all others on the mailing list by mailing your announcement, question, response, etc. to:

IMAGRS-L@CSEARN.BITNET

Everyone who is a subscriber will receive a copy of your message.

Usage of the mailing list has been low to date. The traffic is much lower than the GIS-L list managed by NCGIA/SUNY-Buffalo. Perhaps the IMAGRS-L list would be a good vehicle for exchange of information among AAG RSSG members. You are encouraged to subscribe.

Daniel Brown
Michigan State University



SPECIAL SESSION ORGANIZED FOR IGC

Stephen J. Walsh (University of North Carolina) has organized and will chair a special session on "Remote Sensing Instructional Approaches in Geographic Education" at the forthcoming Twenty-seventh International Geographic Congress (IGC). The IGC will convene in Washington, D.C. during August 1992. Session speakers and paper titles are as follows:

"Interfacing Remote Sensing Research and Instruction in a Developing Country" by M. Duane Nellis, Kansas State University

"Remote Sensing Education: Perspectives from George Mason University" by Barry N. Haack, George Mason University

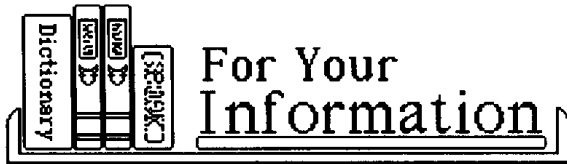
"Analogue and Digital Strategies in Remote Sensing Education" by John B. Rehder, University of Tennessee

"Remote Sensing Instructional Approaches and Facilities at the University of Kansas" by Kevin P. Price, University of Kansas

Anthony J. Lewis, Louisiana State University, will serve as a discussant.

For additional details contact:

Stephen J. Walsh
Department of Geography
University of North Carolina
Chapel Hill, NC 27599-3220
Telephone: 919-962-8901
FAX: 919-962-5604



SPOT PUBLISHES ONE EARTH, ONE ENVIRONMENT

SPOT Image Corporation has published a new large-format booklet entitled One Earth, One Environment. The booklet is fully illustrated with color imagery, maps and photographs covering topics such as global change, desertification, soil degradation, forest depletion, droughts and floods. RSSG members will also be interested in the series of one-page application briefs available on subjects including utility corridor siting, monitoring logging, ecotourism planning, crop monitoring, agricultural production and many others. All are in full-color. Request copies of both from:

SPOT Image Corporation
1897 Preston White Drive
Reston, VA 22091-4368
Telephone: 703-620-2200
FAX: 703-648-1813

IRIS UNIVERSE FOCUSSES ON EARTH'S ENVIRONMENT

IRIS Universe, a magazine on visual computing, devotes Issue 19 (Winter 1992) to scientific analysis and visualization of the environment. Although designed for users of Silicon Graphics computers, this beautifully illustrated magazine will be of interest to anyone involved in remote sensing. To obtain a copy of Issue 19, or to request a free subscription to IRIS Universe contact:

Silicon Graphics, Inc.
2011 North Shoreline Boulevard
Mail Stop 415
Mountain View, CA 94039
Telephone: 415-335-1293
FAX: 415-968-3579

RAVEN MAPS AND IMAGES

Raven Maps and Images has published a new catalogue of its line of computer-generated maps of the United States. Included are shaded relief maps of the nation, and larger scale renditions of many states. In addition, the Raven line now includes several posters portraying the Earth from space. For additional details contact:

Raven Maps and Images
34 North Central Avenue
Medford, OR 97501-5924
Telephone: 800-237-0798
FAX: 503-773-6834

NORTH AMERICAN VEGETATION INDEX MAP

The U.S. Geological Survey's EROS Data Center (home of more geographers than almost anyone knows) and the Canada Centre for Remote Sensing have cooperatively published an extraordinary new map of North America. The map, prepared from AVHRR data, portrays the "greenness" of the continent during the period 11-20 August 1990 at a scale of 1:12,500,000. Accompanying the map is a brochure (authored by RSSG-member Jeffery Eidenshink) describing the dataset and analysis methods used. The map is available free upon request from:

Customer Services
USGS/EROS Data Center
Sioux Falls, SD 57198
Telephone: 605-594-6151

DRAGON SOFTWARE TEACHING PACKS

Goldin-Rudahl Systems, vendor of the DRAGON image processing software, has announced DRAGON Teaching Packs for educators. The Packs include digital imagery, background material, and detailed instructions for DRAGON-based exercises. Fifteen lessons are currently available. Topics covered include, for example, forest mapping, coastal processes, geological mapping and land cover assessment. FYI ...

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DRAGON software runs on most microcomputers.
For details contact:

Goldin-Rudahl Systems, Inc.
Six University Drive, Suite 213
Amherst, MA 01002
Telephone: 413-253-7340
FAX: 413-549-6401

AVHRR IMAGERY OF CANADA ON CD-ROM

Space Commerce Canada has begun distribution of Manitoba Remote Sensing Centre processed 1-km AVHRR Normalized Difference Vegetation Index (NDVI) data covering western Canada. The data are for 1987-88 and 1989-1990. Compiled on a weekly basis for the period April-September, the dataset includes, for each pixel Channels 1, 2, 4 (thermal) and the NDVI. Image processing and display software for IBM PCs is included. Educational institutions can purchase the CD-ROM for \$225 (Canadian). Others are charged \$250. A 7% postage charge should be added. For additional details contact:

Space Commerce Canada
27011-1 Lombard Place
Winnipeg, Manitoba
CANADA R3B 3K1
Telephone: 204-489-6541
FAX: 204-949-0867

GLOBAL GRASS CD-ROM

The Cook College Remote Sensing Center of Rutgers University and the U.S. Army Corps of Engineers Construction Engineering Research Laboratory (CERL) have begun distribution of the CERL Global GRASS 1 digital data set. Included are 50 different raster files for the globe. Data on elevation, vegetation, soils, marine productivity, ecological zones, national boundaries and many other topics are provided. Although the data are designed for use with GRASS software, since the

data are in a simple flat file format users of other software will find them easy to import and employ. The global database project is an ongoing effort and future updates will be forthcoming. The CD-ROM sells for \$375 (plus \$10 if shipped internationally). For additional details contact:

Cook College Remote Sensing Center
Global Dataset Project
Box 231, College Farm Road
Rutgers University
New Brunswick, NJ 08903-0231
Telephone: 908-932-9631
FAX: 908-932-8644

NGDC/EPA GLOBAL ECOSYSTEMS PROJECT

The National Oceanic and Atmospheric Administration's National Geophysical Data Center (NGDC) in Boulder, CO and the U.S. Environmental Protection Agency's Environmental Research Laboratory in Corvallis, OR (ERL-C) are cooperating in a joint effort to develop an integrated geographic database for assessing the role of the terrestrial biosphere in global climate change. The emphasis is on existing global datasets at medium to coarse resolution (e.g., nominally 1/6 - 1 degree grids). Available on floppy disks, the prototype database contains information on climate, ecological regions, vegetation, soils, elevation and bathymetry, boundaries and many other topics. The data are designed for use with IDRISI software, but can be imported easily to other systems. For details on availability contact:

John Kinneman
NOAA/National Geophysical Data Center
325 Broadway
Boulder, CO 80303
Telephone: 303-497-6900; or,
David Tingey
Environmental Research Laboratory
U.S. Environmental Protection Agency
200 SW 35th Street
Corvallis, OR 97333
Telephone: 503-757-4600

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FYI ... Continued from page 8.

REMOTE SENSING FOR SECONDARY EDUCATION

The United Kingdom's National Remote Sensing Centre (NRSC) is working to develop a range of remote sensing teaching materials. The first product, published in 1990, was "Satellite Images for Geography", a teaching resource aimed at secondary grade levels. More recently NRSC has issues "Pictures and Pixels" for the primary grades (students in the age group 9-13). The teaching pack offers teachers and pupils a step-by-step guide to satellite imagery and its use in geographical study. Although examples are mostly from the U.K., lessons can be adapted to other data. For additional details contact:

MJP Geopacks
P.O. Box 23, St. Just
West Cornwall
United Kingdom TR19 7JS

The NRSC has prepared a broad range of other materials for teaching remote sensing. These include videos, posters, fact sheets, teaching packs and slide sets. A free color poster on the International Space Year - 1992 (focussing on remote sensing) is also available. For additional details, or to subscribe to the NRSC newsletter, Albedo, contact:

National Remote Sensing Centre, Ltd.
North Gate Road
Farnborough, Hampshire
United Kingdom GU14 6TW
Telephone: 0252-541464
FAX: 0252-375016

POSTERS PORTRAY IMAGES OF THE EARTH

Spaceshots, Inc. has a new catalogue of their collection of color posters portraying satellite images of the earth. The posters include Landsat images of many U.S. and Canadian metropolitan areas, and several international scenes. In addition, the collection includes a variety of full-global images. Most posters sell for \$13.00 - \$20.00. Spaceshots

also sells 35mm slides, wall murals and T-shirts. For a copy of the catalogue contact:

Spaceshots, Inc.
P.O. Box 1743
Studio City, CA 91614-0743
Telephone: 800-272-2779

MORE POSTERS OF EARTH IMAGERY

An excellent series of color image posters is offered by Worldsat International, Ltd. Their new catalogue describes numerous Landsat scenes on North American locations, global views, teachers guides and educational packages. Individual scenes cost approximately \$16.95 (Canadian). Also available are image murals, mugs, jigsaw puzzles, calendars, globes, postcards and T-shirts. For additional details contact:

Worldsat International, Ltd.
1495 Bonhill Road, Unit 10
Mississauga, Ontario
CANADA L5T 1M2
Telephone: 416-795-0110
FAX: 416-795-0093

Award ... Continued from page 1.

the University of California-Santa Barbara (UCSB), and first Director of the National Center for Geographic Information and Analysis headquartered at UCSB. His untimely death in December 1990 was a great loss to all of his family, many friends and colleagues, and to our profession. The award and accompanying medal were presented to David's son during the AAG Annual Awards Luncheon held in San Diego, CA.

Friends of Dr. Simonett have established the David Simonett Fund in his honor. The fund will provide for a lecture series, fellowships for graduate students and, perhaps, an endowed chair. Contributions can be mailed to:

The David Simonett Fund
c/o University Development
University of California-Santa Barbara
Santa Barbara, CA 93106

EOSAT ANNOUNCES DISCOUNT PRICING

The Earth Observation Satellite Company (EOSAT) has announced two new discount pricing policies. Effective July 1, 1992 EOSAT will offer a 2 percent discount on orders paid in advance. EOSAT will also offer customers ordering a full-price digital Landsat Thematic Mapper (TM) scene shipped before December 31, 1992 a discount coupon good for 10 per cent off a similar product ordered in the first half of 1993. The discount coupon can be applied to Landsat TM digital products including EOSAT's most popular product, the "floating" format, which allows customers to choose center-point coordinates for full-scene products. The floating format eliminates the possibility of a customer having to buy two standard scenes when the area of interest straddles scene boundaries along a satellite path. The 10 percent discount coupon cannot be used in conjunction with the 2 percent prepayment discount. For additional details contact:

EOSAT
4300 Forbes Boulevard
Lanham, MD 20706-9954
Telephone: 301-552-0547

SPOT IMAGE CORPORATION ANNOUNCES EDUCATIONAL SUPPORT PROGRAM

The SPOT Image Corporation has established an Educational Support Program (ESP) designed to encourage educators to integrate satellite data into teaching and research activities. The program includes two new discount programs:

1. SPOT Education and Evaluation Data Sets (SEEDS)

As part of the SEEDS program, SPOT will provide local area digital imagery for \$650 per scene (\$800 per scene for photo products). The offer is limited to one P and/or one XS scene of an area in the vicinity of the instructor's institution. Imagery must be from the archive processed to Level 1A or 1B, and is available on a one-time-only basis for each educational institution. Data must be purchased by October 30, 1992.

2. Standard Educational Discounts

ESP standard discounts are offered for purchase of additional SPOT data. Level 1 digital imagery and film products are available at \$1000 per scene. SPOTViews (digital or film) are available for \$2000 for a full scene, \$1400 for a 15 minute area, and \$750 for a 7.5 minute area. These prices apply to any of the 400,000 U.S. or international scenes in the Reston, VA archive. Each educational institution may purchase up to 10 Level 1 scenes and 4 SPOTView scenes per year. For additional details contact:

SPOT Image Corporation
1897 Preston White Drive
Reston, VA 22091-4368
Telephone: 703-620-2200
FAX: 703-648-1813

U.S. DEPARTMENT OF ENERGY FELLOWSHIPS FOR GLOBAL CHANGE

The U.S. Department of Energy (DOE) has established the Graduate Fellowships for Global Change Program. Global Change fellows must be enrolled as full-time students, be working towards a master's or doctoral degree, and be U.S. citizens. Fellows receive an annual stipend of \$14,400, and their tuition and fees. Each fellow is required to undertake a practicum at a participating agency to gain practical, state-of-the-art experience in global-change research. Awards of fellowships are made on an annual basis. Approximately 50 fellowships have been awarded to date. Geographers pursuing remote sensing specialties appear well-qualified to apply.

For fellowship applications and additional details contact:

Oak Ridge Associated Universities
Science/Engineering Education Division
P.O. Box 117
Oak Ridge, TN 37831

UNIVERSITY COLLEGE LONDON
Lectureships in Remote Sensing and GIS

Applications are invited for two posts in the Department of Geography, University College London. Applicants should have their primary research interest in the field of remote sensing and /or geographic information systems (GIS) with a broad commitment to numerical and computational methods in Geography. Applications are invited for any of the following categories of post:

1. an experienced researcher with an established track record in research funding and publication - permanent appointment at any point on the Lecturer scale;
2. a junior, post-doctoral lectureship - permanent appointment subject to successful completion of the normal 3-year probationary period;
3. a temporary, one year appointment for those with less experience or expertise in the field - to be reviewed during the first year with a view to making the post permanent.



Excellent facilities for research are available. Inquiries should be sent as soon as possible to Professor R.J.C. Munton, Department of Geography, University College London, 26 Bedford Way, London, U.K. WC1H 0AP; FAX: (+44) 071-380-7565.

USE YOUR NEWSLETTER

The RSSG Newsletter is your vehicle for communicating with colleagues interested in remote sensing. You are invited to send news regarding publications, awards, honors, academic programs, research activities, commercial ventures, students, jobs and other announcements to:

James W. Merchant
Conservation and Survey Division
University of Nebraska-Lincoln
113 Nebraska Hall
Lincoln, NE 68588-0517
Telephone: (402) 472-7531
FAX: (402) 472-2410
Internet: JM1000@CALMIT.UNL.EDU

**NATIONAL SCIENCE FOUNDATION TO
SPONSOR
ENVIRONMENTAL INFORMATION
MANAGEMENT SYMPOSIUM**

Call for Papers

The National Science Foundation will sponsor a symposium on "Environmental Information Management and Analysis: Ecosystem to Global Scales" May 20-22, 1993 in Albuquerque, NM. The meeting will focus on four related themes: (1) Ecosystem, regional, continental and global scale research; (2) Scientific databases for long-term and broad-scale research; (3) Analytical approaches for addressing questions at ecosystem to global scales; and (4) Development, management and analysis of databases designed to address ecosystem, regional, continental and global environmental issues (including case studies). Titles and abstracts are due August 21, 1992. For additional details contact one of the following symposium organizers:

William Michener
Baruch Institute
University of South Carolina
Columbia, SC 29208
Telephone: 803-777-3926
FAX: 803-777-3935
EMAIL: wmichener@lternet.washington.edu
(Internet); wmichener@lternet (BITNET)

James Brunt
Department of Biology
University of New Mexico
Albuquerque, NM 87196
Telephone: 505-277-0002
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GEOGRAPHY AND REMOTE SENSING AT THE ENVIRONMENTAL RESEARCH INSTITUTE OF MICHIGAN (ERIM)

by
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The Environmental Research Institute of Michigan (ERIM) is a nonprofit organization that performs research and development and related services for its sponsors. Within the broad area of modern sensor and imaging technology, computer science, and optics, ERIM's projects encompass research in a great variety of remote sensing devices and techniques.

Beginning in 1946, the Willow Run Laboratories (WRL) operated as a major research unit of the University of Michigan.

The laboratories then separated from the university in 1973 to become an independent organization named ERIM.

ERIM has continued the same type of mission-oriented research that WRL performed for 27 years. The primary focus in each of our three technical divisions -- Advanced Concepts, Image Processing Systems, and Sensor Systems -- is to solve sponsors' problems within a context of technical excellence.



The Institute employs more than 800 people in its research and support activities, including student interns and faculty from neighboring universities. About 60 percent of the staff have degrees at or above the masters level in engineering, physics, mathematics, and the natural sciences as well as in accounting, business administration, education, law, personnel administration, and geography. ERIM staff members also serve on a variety of professional and technical committees, government advisory boards, and the editorial boards of several journals.

According to ERIM's Employee data base, there are 12 staff members who hold degrees in geography (approximately 1.5% of the staff). It is interesting to note that many of these geographers are engaged in non-geographic activities. For example, the administrative head of the Image Processing Systems Division is a geographer; however, his primary responsibility is managing the division's various contracts (more than \$25.5 million last year alone). There are also many non-geographers engaged in geographic activities. ERIM's GIS specialist has an undergraduate degree in Mechanical Engineering and a graduate degree in Natural Resources. There is at least one geographer in each of the Institute's three technical divisions, although most are employed in the Image Processing Facility (described in

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detail below). ERIM personnel holding advanced degrees in geography include Mr. James T. Clinthorne in ERIM's Advanced Concepts Division, Mr. Francis M. Darnan in the Sensor Systems Division, and Ms. Julie B. Odenweller and Ms. Alexandra Smith, both in the Image Processing Systems Division. A list of former ERIM geographers would include Mr. Kenneth P. Ferguson of EOSAT, Dr. David R. Hicks of Auburn University, Mr. Albert N. "Buzz" Sellman of CIESIN, and Mr. Victor Torres of EOSAT.

ERIM has been an important contributor to the development of several important remote sensing tools. The World's first multispectral scanner was developed at WRL/ERIM during the late 1950's (the M-1, for Michigan-1). The original MSS was an analog system that used a strip film recorder as storage media. Later, Bendix Aerospace, which was also based in Ann Arbor, developed the first commercially-available all-digital multispectral scanner (M2S). Members of this group joined ERIM in 1978 when Bendix transferred its Earth Resources Data Center (ERDC) and associated personnel.

The World's first Synthetic Aperture Radar (SAR) system was developed at WRL/ERIM between 1957 and 1960. The AN/UPD-1 SAR was used to produce the first high-resolution radar map. SAR offered a major advance in radar resolution capability by making azimuth resolution independent of range. In 1958 ERIM developed the first practical processor for SAR data. The first device was an optical processor - far simpler and faster than existing analog or digital processing.

In addition to the above technical innovations, ERIM continues to sponsor several annual conferences and symposia: the International Symposia on Remote Sensing of Environment (since 1962), the Thematic Conference on Remote Sensing for Exploration Geology (since 1982), Earth Observations and Global Change Decision Making: A National Partnership (since 1989), and the Tri-Service Radar Symposia (since 1950).

ERIM's Image Processing Facility

ERIM's Image Processing Facility (IPF), part of the Image Processing Systems Division, is dedicated to the processing and production of high-quality products from all types of digital data. These images and map products are derived from such diverse sources as the Landsat and SPOT satellites, airborne scanners and radar, aerial photography, digitized maps, and digital terrain data.

The IPF software library, consisting of more than 200 main programs and 100 subroutines, is one of the largest collections of software within a single organization for the display, analysis, and processing of remotely sensed and geographically referenced data. Major IPF software developments include advanced image display software, rigid model geometric correction software for various satellite and airborne platforms, and resampling procedures based on a deconvolution algorithm. In addition, the ERIM-developed raster-based geographic information system (GIS) package complements a vector-based ARC/INFO GIS package.

The software host is a network of UNIX Work Stations (70 SUN Sparc 1 & 2, 4/330, and 4/490 work stations, 15 Silicon Graphics Personal IRIS or 4D/210 work stations, and more than 100 X-Window terminals) and a Digital Equipment Corporation VAX CLUSTER operating under VAX/VMS. The VAX CPU has 40 Mbytes of main memory and a floating point accelerator. The various hardware components are networked via multiple ethernet segments, a broad-band network, and local talk. The system peripherals include two 256 Mbyte disk drives, fourteen 456 Mbyte disk drives, four 842 Mbyte disk

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drives, eight 800/1600/6250 bpi magnetic tape transports, forty-eight terminal input ports, modems, two DECNET ports, more than 50 laser printers, a Kodak XL7700 color printer, and a 40 inch pen plotter. The various work stations support Vitec Image Display systems, 3-1/2 inch floppy disk drives, 1/4 inch, 1/2 inch, and 8 mm tape drives, and have a combined 75 Gigabytes of on-line storage capacity. In addition to the standard computer peripherals described above, a number of specialized devices are connected to the system. These include two high-resolution Gould IP 8400/ IP 8500 Image Analysis Stations, two additional interactive color CRT display systems, a digitizing table with free-floating cursor and black and white graphics display CRT, a high density (10,000 bpi) 14-track tape transport and interface, a 70 mm continuous strip film recorder, a 20 cm by 25 cm high-resolution drum film recorder, a large-format 100 cm by 100 cm drum recording and scanning system, and a precision 9 inch laser beam film recorder. ERIM has developed high-speed, hard-wired processors and a general purpose array processor are used for geometric corrections and resampling, maximum likelihood classification, and spatial pattern recognition. A 1.2 Gigabyte optical disk is utilized for large-area database storage. Combinations of purchased and internally developed hardware and software truly make the IPF one of the most powerful non-government image processing facilities in the world.

A photographic laboratory supports the Image Processing Facility and contains specialized equipment for generating precision graphic products from the film exposed by various digital film recorders. The laboratory includes two continuous (automatic) black and white film processors for handling paper and film up to 40 inches, a continuous color paper processor for handling up to 40 inch paper, two precision 10 X 10 inch enlargers for making up to 40 X 50 inch enlargements, a continuous color film processor, and the instrumentation necessary for color and black-and-white quality control. The photographic laboratory is directly connected to the image processing equipment to support real-time modifications to the image processing chain.

During the past few years, research at ERIM's IPF has concentrated on developing techniques to process, correct, and enhance data from a variety of different sensors, platforms, and other sources of digital data. The resulting information from one or more of these sources can then be used directly for a multitude of resource related applications. Some of the remote sensing technologies and resource applications that are being researched and developed at the Institute include:

Cartographic Applications: Planimetric, bathymetric, thematic, and topographic mapping using a variety of different sensors and platforms (airborne multispectral scanner, airborne SAR data, space borne multispectral scanners (MSS, TM, SPOT, AVHRR, CZCS), and space borne microwave systems (ALMAZ, SEASAT, ERS-1)

Geographic Information System Applications: Data base production, format conversion, spatial modeling and analysis, and graphic product generation

Change Detection Applications: Combining current and historical satellite images to highlight changes for map and data base updating, cross-sensor emulation between various sensors, and unique change detection algorithm development

Large Area Mosaics: Development of software for combining multiple satellite images into large-area digital mosaics, orthorectification of satellite data or aerial photographs, "block" correction techniques for various sensors/platforms

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**SUSTAINABLE LAND TRANSFORMATIONS NETWORK
FOR WESTERN NORTH AMERICA**

I am interested in taking part in a Network to exchange ideas and information on sustainable land transformations (SLT) in Western North America (WNA). Please add me to the Network communications.

1.	Name _____	Telephone _____
	Affiliation _____	FAX _____
	Mailing address _____	E-Mail _____
	_____	Date _____

2. Principal interests & expertise relevant to the Network:

- | | |
|--|--|
| <input type="checkbox"/> Past LT's and consequences | <input type="checkbox"/> Forest & Rangeland factors |
| <input type="checkbox"/> Defining sustainability | <input type="checkbox"/> Urbanization & settlement factors |
| <input type="checkbox"/> Land capability | <input type="checkbox"/> Economic development factors |
| <input type="checkbox"/> Ecoregions | <input type="checkbox"/> Social & political factors |
| <input type="checkbox"/> Climate & atmospheric factors | <input type="checkbox"/> GIS/Data base development |
| <input type="checkbox"/> Hazard mitigation/adaptation | <input type="checkbox"/> Determining users' data needs |
| <input type="checkbox"/> Water resource factors | <input type="checkbox"/> Regional Observatory |
| <input type="checkbox"/> Geological factors | <input type="checkbox"/> Fundraising |
| <input type="checkbox"/> Agriculture & soils factors | |

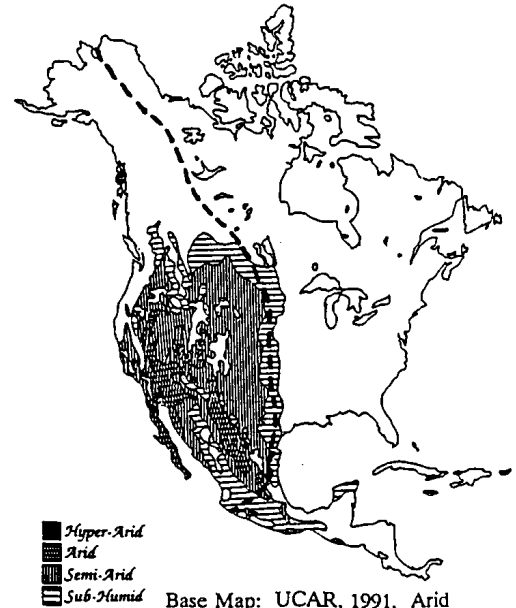
Other (specify) _____

3. Subregional interests (e.g., Pacific Northwest, California Urban, Rocky Mountains, Great Plains)

4. Interest in Network organization & maintenance (Y_N__)

5. Others who may be interested (name, affiliation, phone)

6. Comments/Questions



Base Map: UCAR, 1991. Arid Ecosystems Interactions. Report OIES-6, p. 10.

Return form to: Robert H. Alexander
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FAX: (303) 236-9909 / FTS 776-9909
Internet: balexand@usgs.gov

Some Personal Observations

Working at ERIM's Image Processing Facility has been a continuous learning experience. It has allowed me to work with some of the remote sensing "pioneers" who developed such devices as the multispectral scanner and synthetic aperture radar. Many interesting people have passed through the Institute: President Gerald R. Ford, former President of the United States, was a keynote speaker at one of ERIM's International Symposia. Jacques Cousteau was another keynote speaker in 1975. Alan Shepard and Deke Slayton, two of the original seven Mercury astronauts toured ERIM's IPF, and numerous other scientists and dignitaries from around the world have spent time at ERIM.

During the past 15 years ERIM's Image Processing Facility has helped set-up image processing centers in Cairo, Egypt, Lima, Peru, Panama City, Panama, Dacca, Bangladesh, Katmandu, Nepal, Chambéry, France, and Besançon, France. Although some of the above "duty stations" were fairly arduous, others were quite comfortable. I was fortunate enough to spend a year in the French Alps assisting in the operation of an image processing system. On the other hand, several members of the IPF staff were exposed to gun fire and rioting in Cairo in 1986.

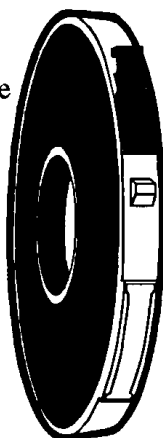
I first came to work at ERIM in the Fall of 1978. As a graduate student I was offered employment doing what must be the worst possible high-tech job in existence -- manually digitizing a series of soil maps. I was immediately impressed by my surroundings. A room full of computers, an absolute requirement in 1978, was used to transform lifeless, brown computer tape into beautiful, full-color images of the earth. Although many years have passed since that first digitizing experience, I still cannot help but feel that I have the best job in the world for a geographer with an interest in remote sensing.

BEWARE OF STICKY TAPE SYNDROME

Prepare to Bake Your Old Landsat Tapes

From the Australian Centre for Remote Sensing (ACRES) Newsletter (March 1992) comes the following advice:

During the course of MSS data processing it was noticed that high density digital tapes containing early Landsat-2 and Landsat-3 data were undergoing a change in physical characteristics ("sticky tape syndrome"). The composition of all magnetic tapes consists of magnetic media bound to a mylar substrate by a polyester binder. Research by ACRES indicated that the polyester binder had



become soft on tapes approaching ten years in age and older. The problem was serious enough to prevent the extraction of MSS data from the tapes. Further research indicated that the softness of the binder could be temporarily reversed by baking the tapes in an oven at a constant temperature of 55 degrees centigrade. An industrial oven was installed to allow ten tapes to be baked at one time. The process has proven to be extremely successful and has enabled recovery of most data. Data are now being transferred to optical media. For additional details contact:

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